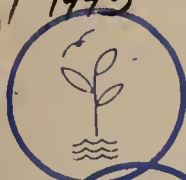




April 1993



# Progress

## Montana Pole Superfund site

By the Montana Department of Health and Environmental Sciences  
and the U.S. Environmental Protection Agency



STATE DOCUMENTS COLLECTION

### INTRODUCTION

The remedial investigation for the Montana Pole Superfund site is complete. The Montana Department of Health and Environmental Sciences (MDHES) and the U.S. Environmental Protection Agency (EPA) supervised the activities which were conducted by the Atlantic Richfield Company (ARCO), a potentially responsible party at the site. The purpose of the remedial investigation was to determine the location, amount and severity of contamination at the site. The results of the remedial investigation will be used in choosing a suitable cleanup option.

This progress report summarizes the findings of the Montana Pole remedial investigation. The results are divided into the following categories:

- 1) Oils/Sludges
- 2) Soils stored in pole barns on site
- 3) Dismantled equipment stored on site
- 4) Soils
- 5) Groundwater

- 6) Separator water
- 7) Silver Bow Creek water and sediments
- 8) Sewer lines
- 9) Ambient air

Remedial investigation activities began in June 1990 and ended in July 1991. The investigation revealed that the three primary sources of site contamination are:

- 1) contaminated soils in the former plant process area
- 2) contaminated soil in a historic drainage ditch running from the plant process area to Silver Bow Creek
- 3) wood treating oils which have seeped through the soils and are now floating on top of groundwater

As noted in the "Get Involved" section of this progress report, copies of the remedial investigation can be found at the Butte Silver Bow Public Library and Montana Tech Library, as well as the other locations listed.

### WHAT WERE THE RESULTS OF THE REMEDIAL INVESTIGATION?

Contamination has been found in a number of locations at the Montana Pole site. Following is a summary of those areas of contamination. More detailed information is available in the remedial investigation report.

#### Oils/sludges

Approximately 26,500 gallons of oil and sludges are estimated to be stored at the site. On-site drums and tanks containing these wastes were sampled. Results showed high levels of volatile and semi-volatile organic compounds in the oils and in most of the sludges. These are carbon-based compounds which volatilize (evaporate) quickly when exposed to air. Metals and pesticide concentrations were low, usually below the ability of laboratory equipment to detect them.

Elevated concentrations of pentachlorophenol and dioxins/furans were also found in these wastes. Dioxin is commonly found with pentachlorophenol.

#### Soils stored in the pole barns

One bag from each of the five buildings was sampled. Concentrations of volatile organic compounds were low. As expected, concentrations of pentachlorophenol were high. Dioxin concentrations were relatively high. Fuel oil was found in all of the bags, which was also expected. Most metals were below detection except arsenic, cadmium and barium which were relatively low.

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# Montana Pole

## INVESTIGATION RESULTS

(Cont. from page 1)

### Dismantled equipment stored in the pole barns

During the emergency removal, EPA dismantled some of the heavily contaminated wood-treating equipment used at the site. This equipment was stored in an on-site building. To obtain samples of contamination, the equipment was wiped with a special cloth and the cloth was then analyzed for contamination. Elevated concentrations of pentachlorophenol were found on the wipe samples, while polynuclear aromatic hydrocarbons levels were low. Dioxins were also detected.

### Soils

This investigation included not only surface soils but also sub-surface soils above and below the groundwater table. This investigation was extensive and was broken into a number of areas:

**Drainage ditch:** Five samples were taken from the surface to three inches deep at various points along the ditch. Pentachlorophenol concentrations were high along the ditch from the plant area to Silver Bow Creek. Soil borings were also collected along the ditch. (Borings are samples taken from a hole drilled into the ground.) Borings ranged up to about 40 feet deep. The purpose of the soil boring sampling was to determine the extent of sub-surface soil contamination. High contaminant levels in the drainage ditch area were found down to the groundwater table (about eight feet below ground surface). Oily wood-treating product was also found floating on the groundwater. Contamination tended to diminish rapidly below the groundwater table.

**Former plant area:** Fifteen test pits were dug with backhoes in the former plant area. Only 11 of the pits were sampled because four had no visible signs of contamination. Pentachlorophenol concentrations ranged from moderate to very high. Six sub-surface soil boring samples were taken here, with the deepest sample at 43 feet. Groundwater is about 10 feet below the surface in this area. Levels of contamination were moderate near the surface and down to the groundwater table and decreased with depth below the groundwater table. These results indicate oily contaminants are migrating down through the soil, and have reached the groundwater. Oily wood treating product was found floating on top of the groundwater and has moved with groundwater toward Silver Bow Creek.

**Stained soils:** Seventeen samples came from surface areas showing visible contamination. Depths of the samples ranged from the surface to six inches. Pentachlorophenol concentrations were moderate to high. Fuel oil was found in nine of the samples.

**Wood storage areas:** After treatment, poles were taken to these areas and stored. It is likely that pole drippings caused soil contamination in these areas. Samples were taken from the surface in grid patterns to get representative soil samples and to determine the boundaries of contamination around the storage areas. Pentachlorophenol contamination levels in these areas were low to moderate in soils at and near the surface. Contamination was not found in sub-surface boring

samples also taken in these areas.

### Groundwater

The main purposes of the groundwater investigation were to determine the extent of groundwater contamination and the interaction between groundwater and Silver Bow Creek. Fifty-two on-site and 16 off-site monitoring wells in addition to two private wells were sampled. The off-site wells are located both north and south of the site. Groundwater flows from south to north at the site. The wells south of the site in the Mount Moriah Cemetery were used to help determine the quality of upgradient groundwater. The cemetery wells contained no site-related contaminants.

Pentachlorophenol, fuel oil and other site contaminants were found in most of the shallow and deep monitoring wells located in the former plant area and in areas where wood-treating oil was found floating on top of the groundwater. Pentachlorophenol had also migrated into Silver Bow Creek and was found in a few wells adjacent to the creek. These wells were located downstream in the Colorado Tailings. Metals were found in moderate concentrations, generally in wells near Silver Bow Creek, and are thought to be related to contamination from past mining activities. No contamination was found in either of the off-site private wells.

### Separator water

ARCO collected water samples from the groundwater recovery system previously installed by EPA during the 1985 removal action. This system pumped contaminated groundwater to the surface and then separated the wood-treating oil from the water. Samples were taken at two of these separators and consisted of water entering and leaving the system. Results were compared to determine the system's effectiveness. Results showed pentachlorophenol concentrations in the water decreased by approximately 50 percent.

### Silver Bow Creek — water and sediments

ARCO collected samples from Silver Bow Creek at locations upstream, adjacent to, and downstream of the site. Areas where wood-treating oil was seen seeping into the creek were also targeted for sampling. The downstream locations were approximately 200 and 4,400 feet downstream from the seep areas. Water samples taken from the creek reflect the condition of the creek at the time of the sampling. Sediment samples help give a picture of the long-term effects of contamination because contaminants tend to accumulate in creek sediment.

Water contamination was highest at the seep locations and diminished downstream due to dilution. In the sediments, contamination was found adjacent to and downstream of the site.

**MDHES Superfund Hotline:  
1-800-648-8465**



## Sewer lines

This investigation's purpose was to determine if contaminants in the ground are infiltrating area sewer lines. The results indicated that little, if any, infiltration is occurring.

## Ambient air

"Ambient air" is the outdoor air on and around the site. Sampling results indicated low levels of site contaminants in ambient air. This contamination is attributed to dust from contaminated soil areas.

## SITE BACKGROUND

A brief look at the history of the Montana Pole site is helpful in understanding how the area may have become contaminated. Operations began in 1947. Over the years, a mixture of five percent pentachlorophenol in fuel oil was used to treat wood. For a brief period in 1969, the company used creosote. Two enclosed pressurized chambers called "retorts" were installed in the 1950s. Liquid condensation from these retorts consisted of water and oil which was separated. The water, which may have still contained some oil, was drained into an open ditch running from the plant to Silver Bow Creek. It is also believed that ponds were used for this type of waste disposal.

Large, open tanks containing wood-treating fluid were also in use at the site for treating only the ends of poles. These "butt treatment vats" were the site of an explosion in 1969. Wood-treating fluids were reportedly spilled as a result of the explosion and fire. Apparently, there was additional leakage from pipes and valves believed to have been broken during the fire.

It is also likely some spillage of oils occurred during daily plant operation activities. Soils near the mixing tank,

treated wood, storage areas, leaking pipelines, the retorts and the clarifying tanks may have been contaminated from daily activities.

In 1983, oils were noticed seeping into Silver Bow Creek. In 1985, EPA conducted an emergency removal at the site to stop the seepage. EPA dug up heavily contaminated soils and dismantled contaminated equipment. Both the soils and equipment are currently stored in buildings at the site. EPA also installed a groundwater cleanup system which pumped contaminated groundwater and floating oil to the surface and separated the oil from the water. The recovered oil was stored at the site.

The remedial investigation of the site was started in June 1990 and included sampling of groundwater, site soils, bagged soils in the barns, creek water and sediments, sludges and oils, separator water from the EPA groundwater treatment system, ambient air and equipment. Specifically, the major contaminants at the site were found to consist of pentachlorophenol, hydrocarbons, oil, and dioxins/furans. Some heavy metals, probably the result of nearby mining/milling activities, were also found at Montana Pole.

## GET INVOLVED

MDHES will soon issue a proposed plan for cleanup of the Montana Pole site. MDHES will be holding a public comment period on the proposed plan. During this time, the public may submit comments on all supporting documentation, including the Remedial Investigation Report. Comments and questions should be sent to Brian Antonioli, Montana Department of Health and Environmental Sciences, 616 Helena

Ave., Room 302, Helena, MT 59620. The public can also call the Superfund hotline and talk to Brian Antonioli or Jane Heath Stiles. The hotline number is 1-800-648-8465. Copies of the Remedial Investigation Report can be found at the Butte Silver Bow Public Library, Montana Tech Library, the Butte EPA office located in the basement of the courthouse, the State Library in Helena and the MDHES Superfund office in Helena.

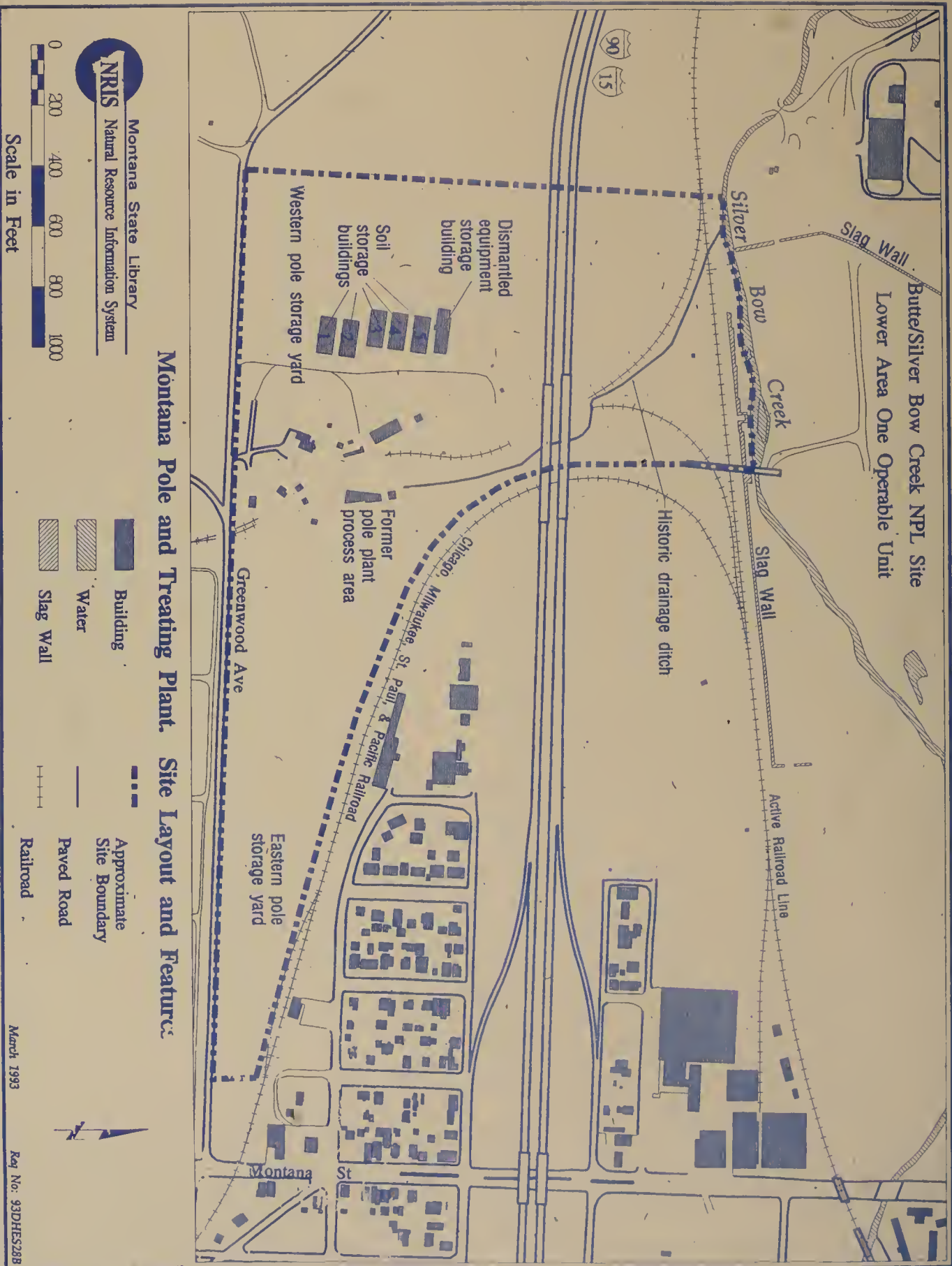
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